

Tessera Solar Projects: Imperial Valley Solar (SES Solar Two) Calico (SES Solar One)

January 22, 2010

Renewable Energy Policy Group

SunCatcher™ Technology Overview



- 25 kW solar power system
- Dish concentrator tracks, collects, and focuses the Sun's energy
- Stirling engine converts thermal energy to grid quality electricity.
- Minimal water requirement (4.5 gallons/MWh; 22 afy/500 MW)
- Highest efficiency among peers (avg. ~25%, record at 31%)
- Dish systems both modular & scalable
- Terrain flexible (<5% grade)

Maricopa Solar On-line

- 60-dish SunCatcher™ Project In Peoria, AZ
- 1.5 Megawatt Nameplate Capacity
- Grid Connected And Power Purchased By Salt River Project
- Ribbon Cutting January 22, 2010



Imperial Valley Solar (SES Solar Two)

Imperial Valley Solar (SES Solar Two)

What:

- 750 MW solar power project using dish-stirling technology developed, designed and manufactured in North America by Stirling Energy Systems, with Tesseract Solar as the project developer
 - Lowest-water use CSP technology (no water for cooling, only for washing mirrors)
 - Comparatively low ground disturbance (no foundations, minimal grading & trenching)
 - Automotive supply chain = employment in US automotive sector
 - Reduced from original 900 MW proposal to avoid cultural resources at east end of project site
- Power Purchase Agreement with SDG&E
- DOE Loan Guarantee Application filed; approved to move to Phase 2 of DOE process

Imperial Valley Solar (SES Solar Two)

Where:

- Located on 6,251 acres of BLM land and 320 acres of private land in the Imperial Valley, 14 miles west of El Centro in southeastern California close to the border with both Arizona and Mexico
- Heavily disturbed land selected in consultation with BLM in 2005
 - Between I-8 and railroad
 - SDG&E Southwest Powerlink runs through site
 - Extensive past OHV use on site
 - Adjacent to Plaster City gypsum plant
 - Avoids FTHL DWMA to south of I-8 and OHV park to north of Plaster City
- Transmission available
 - Existing transmission for 300 MW phase 1
 - Sunrise Powerlink (approved by BLM and CPUC) for 450 MW phase 2

Imperial Valley Solar

Project Site – Aerial View



Imperial Valley Solar (SES Solar Two)

Jobs:

- Project will create 300 – 700 construction jobs over three-four year period
- Imperial Valley Solar would provide approximately \$60,000,000 (in 2008 dollars) in construction payroll with an average monthly construction workforce of approximately 360 jobs
- Approximately 160 permanent jobs in the supervisory, administrative, construction, operations and maintenance fields

Imperial Valley Solar (SES Solar Two)

Permitting Status:

- Application for Certification (AFC) filed with California Energy Commission (CEC) June 2008
 - Joint CEC/BLM permitting process under MOU
 - CEC “Data Adequacy” finding and BLM NOI October 2008
 - Staff Assessment/DEIS expected February 2010
- Programmatic Agreement for implementation of mitigation for cultural resources under development
- Section 404(b)(1) consultation with ACOE underway
- Informal BA for FTHL submitted late-Dec, concurrence memo for BHS submitted mid-Dec
- August 2010 goal for completion of permitting, to ensure commencement of construction in 2010 to meet ARRA deadlines

Imperial Valley Solar (SES Solar Two)

Risks and Applicant Requests

- Overall Schedule – several weeks lost for publication of SA/DEIS based on current committee schedule (January 8).
 - Committee's attention to make up time after SA/DEIS published to maintain August decision date
- FWS Conference Opinion timing
 - Issue BO/CO in 90 days rather than 135 days to keep ahead of publication of SSA/FEIS
- Army Corps of Engineers Least Environmentally Damaging Practicable Alternative (LEDPA)
 - LEDPA must be consistent with project purpose & need and coordinated with BLM/CEC
- BLM Rental Rates
 - Must be commercially reasonable and feasible
 - Based on fair market value in locale

Calico (SES Solar One)

Calico (SES Solar One)

What:

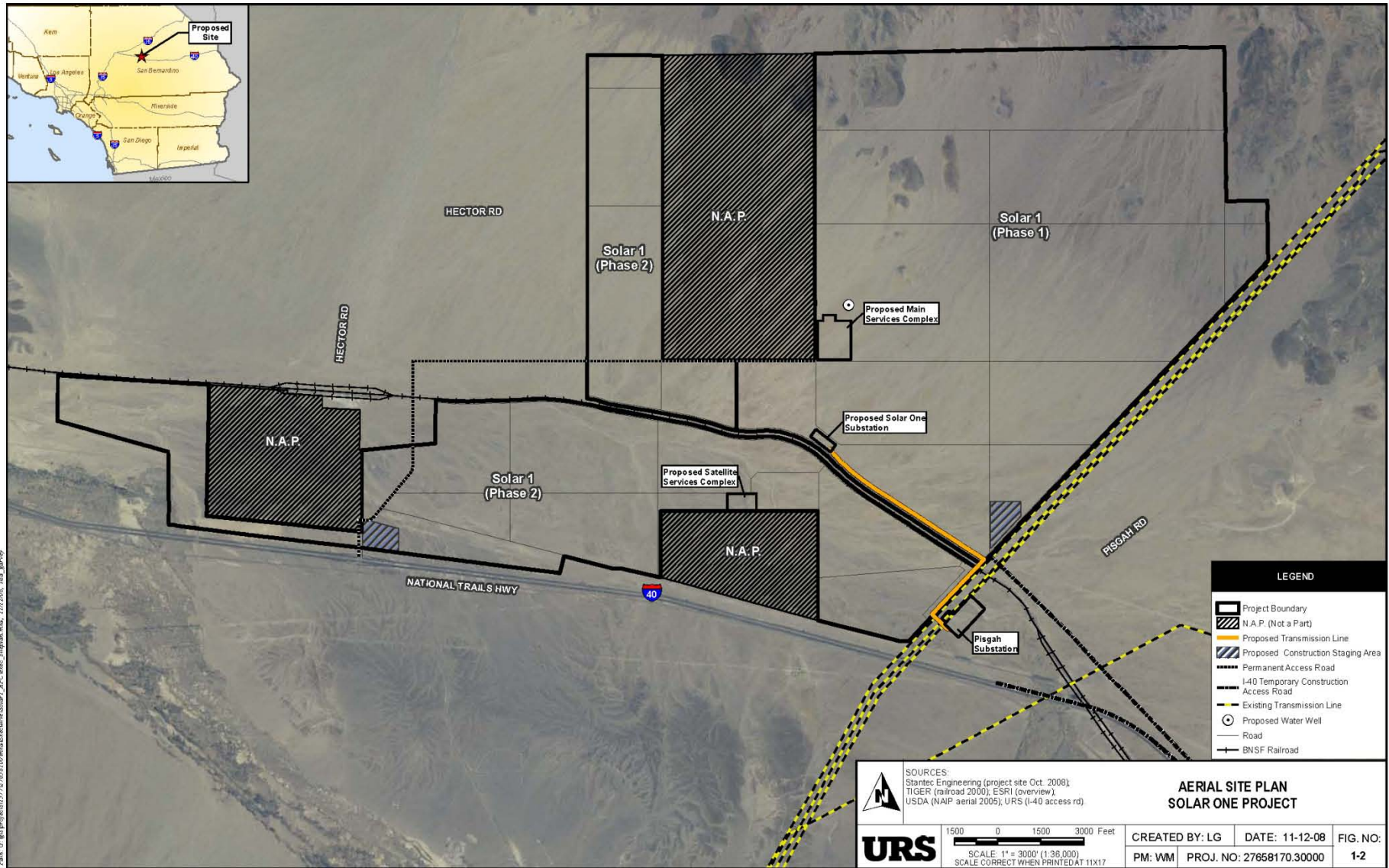
- 850 MW solar power project using dish-stirling technology developed, designed and manufactured in North America by Stirling Energy Systems, with Tesser Solar as the project developer
 - Lowest-water use CSP technology (no water for cooling, only for washing mirrors)
 - Comparatively low ground disturbance (no foundations, minimal grading & trenching)
 - Automotive supply chain = employment in US automotive sector
- Power Purchase Agreement with SCE
- DOE Loan Guarantee Application filed; approved to move to Phase 2 of DOE process

Calico (SES Solar One)

Where:

- Located on 8,230 acres of BLM land in the Mojave Desert, 37 miles east of Barstow
- Previously disturbed land selected in consultation with BLM in 2005
 - Adjacent to I-40; railroad and natural gas lines run through site
 - Adjacent to SCE transmission lines
 - OHV and mining use on site in past
 - Avoids Cady Mtns WSA to north, Pisgah ACEC to east and Pisgah Crater lava flow to south
 - Avoids proposed Mojave National Monument (Feinstein) to the east
- Transmission
 - Existing transmission for 275 MW Phase 1 (only substation upgrades required)
 - Upgrade Pisgah-Lugo 230kv Line to 500kv for 575 MW Phase 2

Calico (SES Solar One) Aerial View



Calico (SES Solar One)

Jobs:

- Project will create 300 – 700 construction jobs over three-four year period
- Calico would provide approximately \$60,000,000 (in 2008 dollars) in construction payroll with an average monthly construction workforce of approximately 360 jobs
- Approximately 160 permanent jobs in the supervisory, administrative, construction, operations and maintenance fields

Calico (SES Solar One)

Permitting Status:

- Application for Certification (AFC) filed with California Energy Commission (CEC) December 2008
- Joint CEC/BLM permitting process under MOU
- CEC “Data Adequacy” finding and BLM NOI May 2009
- Staff Assessment/DEIS expected February 2010
- Programmatic Agreement/MOA for implementation of mitigation for cultural resources under discussion
- Draft Biological Assessment submitted mid-January
- September 2010 goal for completion of permitting, to ensure commencement of construction in 2010 to meet ARRA deadlines

Calico (SES Solar One)

Risks and Applicant Requests

- Overall Schedule –committee schedule calls for publication of SA/DEIS on February 16
 - Committee's attention to monitor progress against schedule
 - Decision date is most critical to applicant
- FWS Conference Opinion timing
 - Issue BO/CO in 90 days rather than 135 days to keep ahead of publication of SSA/FEIS
- Habitat Mitigation cost
 - Discussions underway; finalize at reasonable cost
- BLM Rental Rates

Suggestions for Process Improvement

- Re-evaluate Fast Track list
 - While Tessera Solar believes that the market is broad enough for a variety of technologies and projects to succeed, projects that are not already well advanced in the permitting process are unlikely to be able to meet realistic milestones.
 - There is a risk that if the agencies spread their resources too thinly in an attempt to process too many projects to meet the ARRA deadline, even projects which are well advanced in the permitting process will be jeopardized.
 - We encourage the Commission to focus its efforts on a narrower group of projects with the best and most realistic chance to complete permitting by September 30, 2010.
 - Doing so will maximize California's ability to create jobs, obtain federal stimulus funding, and advance toward the RPS goals in the most expeditious fashion

Suggestions for Process Improvement

- Earlier and more active Committee management of cases
 - E.g. periodic status conferences
- Creatively address resource constraints
 - Share workload between BLM and CEC (e.g. cultural resources chapter for Calico)
 - Utilize BLM's third-party contracting authority
 - Re-direct staff with permitting expertise to the siting division through 2010